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THE RAG-DOLL SEED TESTER

ITS USE IN DETERMINING WHAT EARS OF CORN ARE FIT FOR SEED

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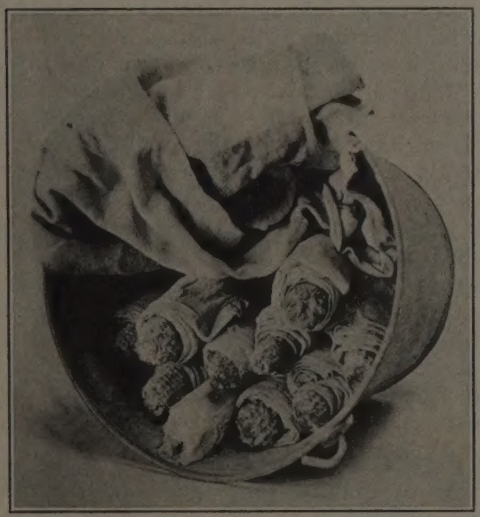

Ready for the Test

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ALMOST every fall, hard freezing weather in one or more sections of the United States catches the corn crop in an immature condition and injures or destroys the ears for use as seed. The latest and sappiest ears are often killed, while other ears, somewhat drier, have but a portion of the kernels killed. Frequently there are some ears so mature and dry that they are not injured or but slightly injured. Under such circumstances the uninjured ears are suitable for seed. By inspection they can be separated from the green ears that were killed. However, some of the ears that appear mature and sound have been killed or badly injured. To separate these ears from those that give a good germination, it is necessary to test the germination of a few kernels from each ear.

The rag doll has proved a convenient and satisfactory way of making these germination tests. An effective method of making and using the rag doll is here described.

THE RAG-DOLL SEED TESTER.

TESTING SEED CORN.

VARIOUS kinds of apparatus for testing seed corn are for sale by commercial firms. Others may be manufactured at home with simple materials. Some of these testers, such as the sand-box tester and sawdust-box tester, are described in various publications of the Department of Agriculture and the State agricultural experiment stations. The rag-doll seed tester has proved to be one of the most convenient and satisfactory forms. It is also one of the least expensive testers.

THE RAG-DOLL TESTER.

The cheapest material which has given entire satisfaction is bleached muslin. The muslin should be cut into strips 16 inches wide and from 3 to 5 feet long. With a pencil or crayon draw a line down the center of the strip. Leaving at least 4 inches at the ends, mark the strip crosswise every 4 inches. Number the sections and the tester will appear as shown in figure 1. Moisten the tester before putting the kernels upon it. Number the ears and place them in definite order. From different places on ear No. 1 take out 10 kernels and place them in section No. 1. Similarly take 10 kernels from ear No. 2, place them in section No. 2, and continue in this manner until every section

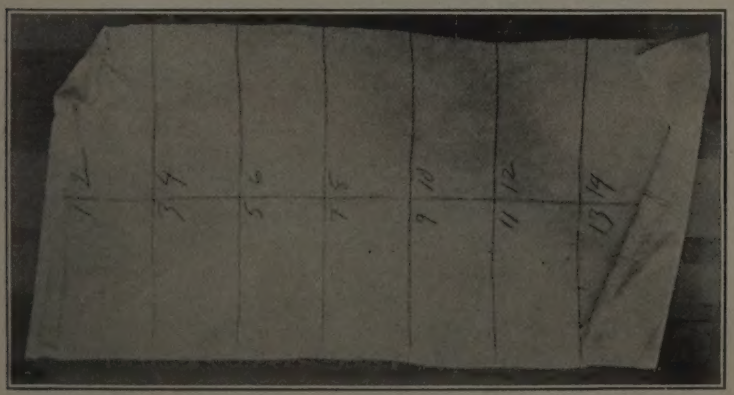

FIG. 1.—Cloth marked off, ready for kernels.

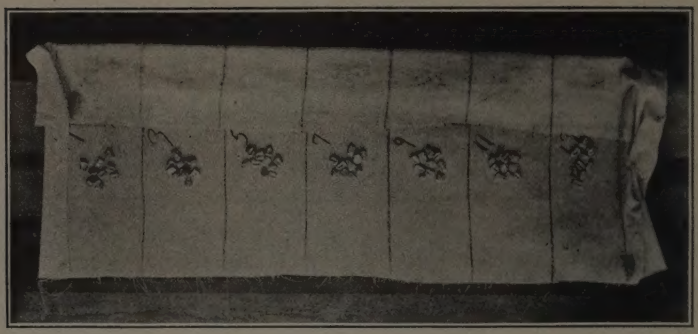

FIG. 2.—Kernels in place, one flap folded.

of the tester has been filled. Care should be taken to place the kernels some distance from the dividing lines, so that slight displacements caused by handling the tester will not mix the samples. Fold each side of the tester over, so that the edges meet in the middle. The method of folding is shown in figure 2. Press the cloth down firmly over the kernels, and, using a cob or some other cylindrical object as a core, roll the tester, as shown in figure 3. Tie a cord or slip a rubber band around the middle, and the doll is complete, as shown in figure 4.

The dolls should be thoroughly immersed in lukewarm water. From 2 to 4 hours have been found sufficient for the soaking, and it is best not to soak for more than 10 hours. Remove the dolls from the water, allow them to drain, and place them where they may be kept warm and moist. During the germination period the dolls should not be subjected to a temperature higher than 100° or lower than 50° F. A temperature between 80° and 90° F. during the day and 50° and 60° during the night will give good results. It is not advisable to give the dolls a second soaking. A good way to prevent drying out is to wrap them up in a piece of wet sacking or put them upright in an ordinary water bucket and cover them with a wet cloth. In either case, provision must be made for draining off excess moisture. At the end of five days, with temperatures approximating those recommended, the kernels should be sprouted sufficiently to show their fitness for seed. If any sample has a noticeably weak germination or has more than two dead kernels, the ear from which the sample was taken should be discarded.[1] Figure 5 shows both good and bad germinations.

[1] There may be times, such as the spring of 1918, when the supply of good seed corn is extremely limited. In such seasons, it is well to retain all ears showing a germination of 60 per cent or more. The poorer germinating ears will have to be used if the supply of seed germinating 80 per cent or better is not sufficient. Keep the poorer seed separate and if it must be used, plant it thicker than the rest.

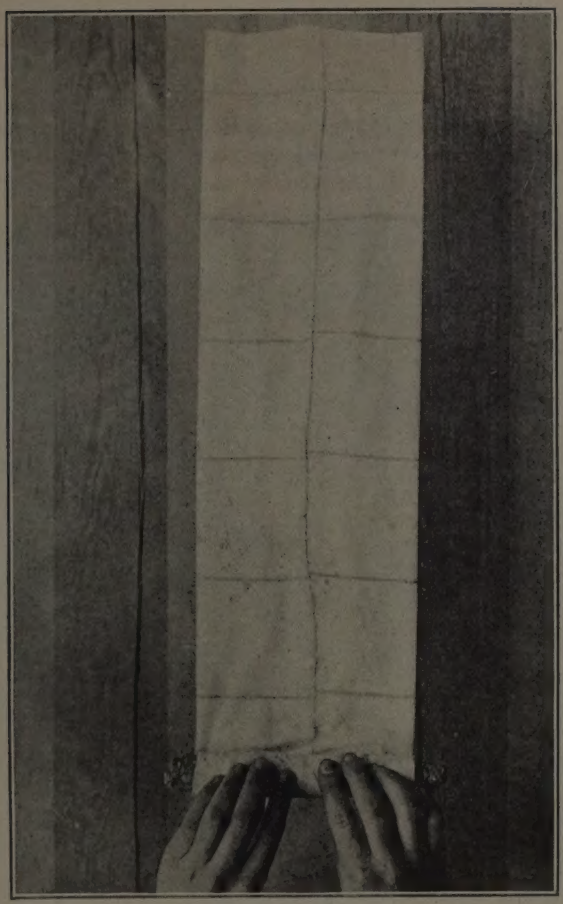

FIG. 3.—Rolling the rag doll.

FIG. 4.—Rag doll ready for soaking.

If the dolls are to be used over again, they should be thoroughly scalded in order to destroy any mold growth.

CONCLUSION.

Of course, the testing of the germination of each ear is some trouble. However, to obtain a successful corn crop it is work that must be done by those who have not retained seed corn of good germination

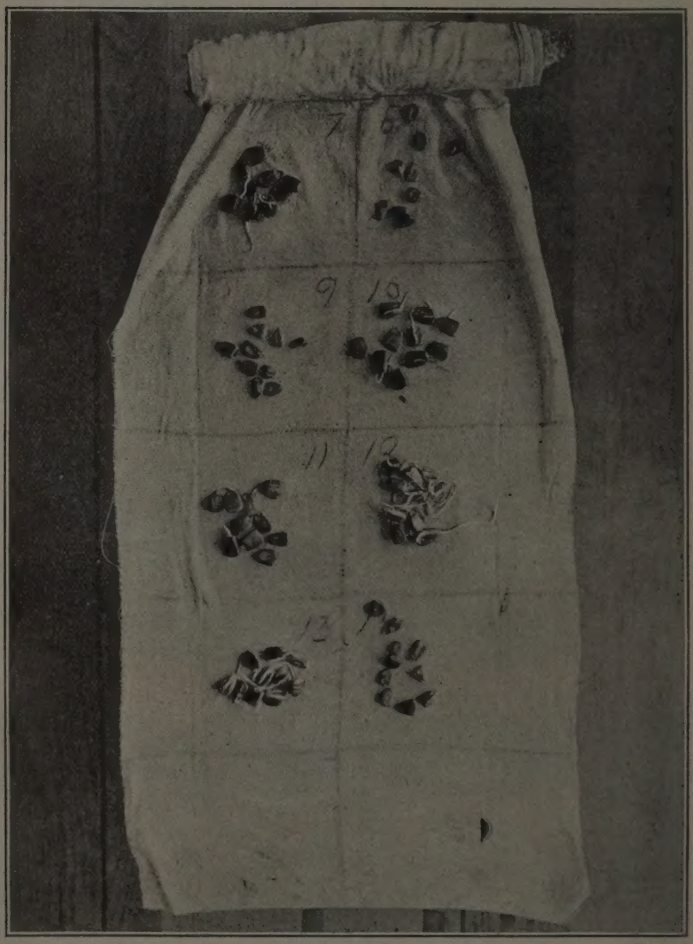

FIG. 5.—Results of the ear test. Note the difference in germination. Some have failed entirely, some have only a weak germination, while only one is a desirable seed ear.

from a previous crop. The holding over of good seed corn from a crop that matured thoroughly makes it possible to continue the improvement and adaptation of a strain without losing seed and is less troublesome than the making of separate ear germination tests. The use of the rag doll, therefore, is not recommended as the best practice possible, but as the most satisfactory way of getting suitable home-grown seed when a supply has not been held over from a good crop and fall-freezes have occurred so early as to injure the germinating power of the crop.

PUBLICATIONS OF THE UNITED STATES DEPARTMENT OF AGRICULTURE RELATING TO SEED TESTING AND CORN PRODUCTION.

AVAILABLE FOR FREE DISTRIBUTION BY THE DEPARTMENT.

Corn Cultivation. (Farmers' Bulletin 414.)
Seed Corn. (Farmers' Bulletin 415.)
How to Grow an Acre of Corn. (Farmers' Bulletin 537.)
A Corn-Belt Farming System Which Saves Harvest Labor by Hogging down Crops. (Farmers' Bulletin 614.)
Corn Culture in the Southeastern States. (Farmers' Bulletin 729.)
Corn Growing under Droughty Conditions. (Farmers' Bulletin 773.)
Corn in the Great Plains Area: Relation of Cultural Methods to Production. (Department Bulletin 219.)
Tests of Corn Varieties on the Great Plains. (Department Bulletin 307.)

FOR SALE BY THE SUPERINTENDENT OF DOCUMENTS, GOVERNMENT PRINTING OFFICE, WASHINGTON, D. C.

The Production of Good Seed Corn. (Farmers' Bulletin 229.) Price, 5 cents.
The Germination of Seed Corn. (Farmers' Bulletin 253.) Price, 5 cents.
Harvesting and Storing Corn. (Farmers' Bulletin 313.) Price, 5 cents.
School Lessons on Corn. (Farmers' Bulletin 409.) Price, 5 cents.
Testing Farm Seeds in the Home and in the Rural School. (Farmers' Bulletin 428.) Price, 5 cents.
Grades for Commercial Corn. (Department Bulletin 168.) Price, 5 cents.
Farm Practice in the Cultivation of Corn. (Department Bulletin 320.) Price, 15 cents.
How Seed Testing Helps the Farmer. (Separate No. 679, Yearbook, 1915.) Price, 5 cents.

Many of the State agricultural colleges have free bulletins on seed testing.

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